

01/19/01  
1c961 U.S. PTO

1c962 U.S. PTO  
09/770752  
01/19/01

## WASTE BIN STRUCTURE

### BACKGROUND OF THE INVENTION

#### FIELD OF THE INVENTION

The present invention relates to a waste bin structure, and more particularly to a waste bin structure that can be opened by a triggering action, and by a stepping action of a user's foot so that the waste bin structure has dual functions and effects.

#### DESCRIPTION OF THE RELATED PRIOR ART

A conventional waste bin is used for storing wastes or rubbish therein. However, the conventional waste bin is not provided with a cover or lid, so that the wastes are directly in contact with the air of the ambient environment. Therefore, when the wastes are organism that are derived from the kitchen, for example, the odor of the wastes will leak from the waste bin to the ambient environment, thereby causing uncomfortable sensation to the people. In addition, the conventional waste bin is not provided with a cover or lid, so that the wastes are exposed to the ambient environment, thereby decreasing the aesthetic appearance of the conventional waste bin.

A first conventional covered waste bin includes an upper cover formed with a protrusion so that the user can hold the protrusion for removing the upper cover. However, the user has to operate the upper cover manually, thereby causing inconvenience to the user.

A second conventional covered waste bin includes a single cover piece. However, its airtight effect is not sufficient, so that the odor of the wastes easily leaks from the waste bin to the ambient environment

0970753 044304

A third conventional covered waste bin includes a pedal having a bottom pivoted with a linking lever set, whereby the pedal can be stepped so that the linking lever set is driven to push an upper cover for removing the upper cover. The third conventional covered waste bin has a better airtight effect, however, it is not easy to clean the waste bin.

A fourth conventional covered waste bin includes a barrel lid having a trigger point which may be pressed so that the locking set mounted in the barrel lid can be locked or released, so as to close or open the upper cover. However, the operation of the barrel lid is not suitable for a large waste bin, so that the volume of the waste bin is limited.

### **SUMMARY OF THE INVENTION**

The present invention has arisen to mitigate and/or obviate the disadvantage of the conventional waste bin.

The primary objective of the present invention is to provide a waste bin structure which can be opened by a triggering action, and by a stepping action of a user's foot so that the waste bin structure has dual functions and effects.

Another objective of the present invention is to provide a waste bin structure which can be opened by a triggering action, or by a stepping action of a user's foot, depending on the volume of wastes, by means of the pivotal connection of an inner cover and an outer cover of a barrel cover.

A further objective of the present invention is to provide a waste bin structure, wherein the gap between the inner barrel and the outer barrel can be covered by means of the pivotal mounting of the outer cover of the barrel cover,

thereby preventing the wastes from falling into the gap between the inner barrel and the outer barrel.

A further objective of the present invention is to provide a waste bin structure which may be portable by mounting of a handle portion of the outer barrel.

A further objective of the present invention is to provide a waste bin structure which includes an inner barrel that can be removed to be cleaned. In addition, the inner barrel is provided with a hanging hook for hanging the inner barrel into the outer barrel without wobbling. Further, the hanging hook of the inner barrel may also function as a handle, so that the inner barrel is portable.

Thus, in accordance with the present invention, there is provided a waste bin structure comprising:

an inner barrel, an outer barrel, and a barrel lid, the inner barrel received in the outer barrel, a connecting portion mounted on a rear end of an inner rim of the outer barrel, the connecting portion having a top face integrally formed with a cover, the cover having a front end provided with two hanging shafts, the barrel lid having a distal end provided with two hanging ears each snapped on the hanging shaft of the cover so that the barrel lid covers a top edge of the outer barrel, the barrel lid provided with a locking portion that is opened and closed by triggering; so that the barrel lid can be opened by triggering action, the connecting portion of the outer barrel having a center defining a channel, a linking lever received in the channel and having a first end formed with a horizontal bent portion passing through a protruding ear of a bottom of a rear end of the barrel lid, and a second end passing through a front

end of the outer barrel and pivoted with a pedal which may be stepped so that the linking lever pushes the lid cover to pivot upward;

the improvement comprising:

the lid cover including an inner cover and an outer cover, the inner  
5 cover placed in an inner rim of the outer cover, the locking portion of the lid  
cover mounted between the inner cover and the outer cover, the inner cover  
having a front end provided with a touch portion that may be pressed so as to  
pivot the inner cover to move upward independently, the top face of the  
connecting portion of the outer barrel having a front end defining a hanging  
10 recess, the inner barrel having a rear side having a top edge provided with a  
hanging hook portion secured in the hanging recess of the connecting portion  
of the outer barrel, the outer barrel having a back side provided with a hood, a  
plurality of screws each in turn extending through the hood, the outer barrel,  
and the connecting portion, so that the connecting portion is secured inside of a  
15 top portion of the outer barrel, and the hood is secured outside of the top  
portion of the outer barrel to form a handle portion of the outer barrel, such that  
the outer barrel is portable, and the lid cover of the waste bin structure can be  
opened by a triggering action, and by a stepping action of a foot.

Further benefits and advantages of the present invention will become  
20 apparent after a careful reading of the detailed description with appropriate  
reference to the accompanying drawings.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a perspective view of a waste bin structure in accordance  
with the present invention;

Fig. 2 is an exploded perspective view of the waste bin structure as shown in Fig. 1;

Fig. 3 is a perspective view of an inner barrel of the waste bin structure in accordance with the present invention;

5 Fig. 4 is a partially cut-away cross-sectional view of the waste bin structure as shown in Fig. 1;

Fig. 5 is a top plan cross-sectional view of the waste bin structure as shown in Fig. 1;

10 Fig. 6 is a top plan cross-sectional view of the waste bin structure as shown in Fig. 1;

Fig. 7 is a schematic operational view of the waste bin structure as shown in Fig. 1 in use;

Fig. 8 is a schematic operational view of the waste bin structure as shown in Fig. 1 in use;

15 Fig. 8A is a partially enlarged view of the waste bin structure as shown in Fig. 8;

Fig. 8B is a partially enlarged view of the waste bin structure as shown in Fig. 8;

20 Fig. 8C is a partially enlarged exploded perspective view of the waste bin structure as shown in Fig. 8;

Fig. 8D is a perspective view a clip portion of the waste bin structure as shown in Fig. 8C;

Fig. 9 is a front plan operational cross-sectional view of the waste bin structure as shown in Fig. 1;

Fig. 10 is an operational view of the waste bin structure as shown in Fig. 9; and

Fig. 11 is an operational view of the waste bin structure as shown in Fig. 10.

## 5 DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings and initially to Figs. 1-6, a waste bin structure in accordance with the present invention comprises an inner barrel 10, an outer barrel 20, and a barrel lid 30. The inner barrel 10 is received in the outer barrel 20. A connecting portion 21 is mounted on the rear end of the inner rim of the outer barrel 20. The connecting portion 21 has a top face integrally formed with a cover 210. The cover 210 has a front end provided with two hanging shafts 211. The barrel lid 30 has a distal end provided with two hanging ears 31 each snapped on the hanging shaft 211 of the cover 210 so that the barrel lid 30 covers the top edge of the outer barrel 20. The barrel lid 30 is provided with a locking portion 32 that is opened and closed by a triggering action, so that the barrel lid 30 can be opened by the triggering action. The connecting portion 21 of the outer barrel 20 has a center defining a channel 212. A linking lever 22 is received in the channel 212 and has a first end formed with a horizontal bent portion passing through a protruding ear 33 of the bottom of the rear end of the barrel lid 30, and a second end passing through the front end of the outer barrel 20 and pivoted with a pedal 23 which may be stepped so that the linking lever 22 pushes the lid cover 30 to pivot upward as shown in Fig. 7.

The improvement of the present invention will be described as follows.

The lid cover 30 includes an inner cover 34 and an outer cover 35.

The inner cover 34 is placed in the inner rim of the outer cover 35. The locking

5 portion 32 of the lid cover 30 is mounted between the inner cover 34 and the outer cover 35. The inner cover 34 has a front end provided with a touch portion 340 that may be pressed so as to pivot the inner cover 34 to move upward independently. The top face of the connecting portion 21 of the outer barrel 20 has a front end defining a hanging recess 213. The inner barrel 10 has  
10 a rear side having a top edge provided with a hanging hook portion 11 secured in the hanging recess 213 of the connecting portion 21 of the outer barrel 20 so that the inner barrel 10 can be secured on the front end of the connecting portion 21 of the outer barrel 20. The outer barrel 20 has a back side provided with a hood 240. A plurality of screws 242 each in turn extend through the  
15 hood 240, the outer barrel 20, and the connecting portion 21, such that the connecting portion 21 is secured inside of the top portion of the outer barrel 20, and the hood 240 is secured outside of the top portion of the outer barrel 20 to form a handle portion 24 of the outer barrel 20, such that the outer barrel 20 may be portable. In addition, the lid cover 30 of the waste bin structure can be  
20 opened by a triggering action, and by a stepping action of a foot so that the waste bin structure of the present invention has dual functions and effects.

Referring to Figs. 7-11, the rear end of the inner edge of the outer cover 35 of the lid cover 30 is provided with an elastic portion 351 as shown in Fig. 8A, for pivoting the distal end of the inner cover 34. When the locking

portion 32 of the barrel cover 30 is disposed at a detachment state, the inner cover 34 can be pivoted upward by means of the elasticity of the elastic portion 351. The locking portion 32 of the barrel lid 30 includes a locking head 320, a clip portion 321, a locking piece 322, a spring 323, and a receiving seat 324.

5 The locking head 320 has an arrow shape, and is secured to the front edge of the bottom face of the inner cover 34. The outer cover 35 has an inner edge having a front end defining a receiving recess 350 for receiving the T-shape receiving seat 324 of the locking portion 32. The receiving seat 324 has a side provided with a fixing piece 3241 for securing the receiving seat 324 in the  
10 receiving recess 350. The Y-shaped clip portion 321, the locking piece 322, and the spring 323 are received in the receiving seat 324 to operate. When the inner cover 34 is moved downward to press the outer cover 35, the locking head 320 secured on the inner cover 34 presses the clip portion 321 to move downward to compress the spring 323. Then, the clip hooks 3211 of the clip  
15 portion 321 are pressed to move toward each other by limit of the opening of the receiving seat 324 so as to clamp the locking head 320, while the locking piece 322 is rotated to be locked in the bottom end of the receiving seat 324 by means of the spring 323, so that the locking head 320 is disposed at a locked state. Then, after the touch portion 340 of the inner cover 34 is pressed, the clip  
20 portion 321 of the locking portion 32 will press the spring 323 again, so that the locking piece 322 is rotated to detach from the bottom end of the receiving seat 324. Subsequently, the clip portion 321 and the locking head 320 are moved upward by the restoring force of the spring 323, while the clip hooks 3211 of the clip portion 321 are moved outward relative to each other by means of the



flexibility, so as to release the locking head 320, so that locking head 320 is disposed at a detachment state.

Accordingly, the waste bin structure in accordance with the present invention has simple parts that are pivoted with each other, so that the waste bin structure can be assembled easily, and has a cheaper cost of fabrication. In addition, the waste bin structure has an airtight effect so as to prevent wastes contained in the waste bin structure from directly contacting air of the ambient environment, thereby preventing leakage and spread of odor from the waste bin structure.

Although the invention has been explained in relation to its preferred embodiment as mentioned above, it is to be understood that many other possible modifications and variations can be made without departing from the scope of the present invention. It is, therefore, contemplated that the appended claim will cover such modifications and variations that fall within the true scope of the invention.